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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/706,350	11/03/2000	James F. Bredt	Z00837006 GSE	6314 13
23628	7590	09/03/2003		EXAMINER
WOLF GREENFIELD & SACKS, PC FEDERAL RESERVE PLAZA 600 ATLANTIC AVENUE BOSTON, MA 02210-2211			MAKI, STEVEN D	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 09/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/706,350	BREDT ET AL.
Examiner	Art Unit	
Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 02 June 2003.
 - 2a) This action is FINAL. 2b) This action is non-final.
 - 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- Disposition of Claims**
- 4) Claim(s) 1-11,21-42,55-60,73-77,85-105,112 and 115-124 is/are pending in the application.
 - 4a) Of the above claim(s) 1-11,21-42,55-60,73-77,99-105,112 and 115-123 is/are withdrawn from consideration.
 - 5) Claim(s) _____ is/are allowed.
 - 6) Claim(s) 85-98 and 124 is/are rejected.
 - 7) Claim(s) _____ is/are objected to.
 - 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ . |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>9</u> . | 6) <input type="checkbox"/> Other: _____ . |

Decision on Petition to Correct Inventorship under 37 CFR 1.48

- 1) The request to correct the inventorship of this nonprovisional application under 37 CFR 1.48(a) is deficient because:

An oath or declaration by each actual inventor, or inventors listing the entire inventive entity has not been submitted.

The declaration filed 5-11-01 (paper #3) fails to list James F. Bredt, Timothy C. Anderson, David B. Russell, Sarah L. Clark and *Matthew DiCologero* as being the entire inventive entity. Instead, the declaration filed 5-11-01 (paper #3) indicates that the inventive entity of application 09/706350 is James F. Bredt, Timothy C. Anderson, David B. Russell and Sarah L. Clark.

The declaration filed 1-3-02 (paper #6) fails to list *James F. Bredt, Timothy C. Anderson, David B. Russell, Sarah L. Clark* and Matthew DiCologero as being the entire inventive entity. Instead, The declaration filed 1-3-02 (paper #6) indicates that the inventive entity of application 09/706350 is Matthew DiCologero.

Accordingly, the Petition to Correct Inventorship under 37 CFR 1.48 (a) has been DENIED.

35 USC 102(f)

- 2) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(f) he did not himself invent the subject matter sought to be patented.

- 3) **Claims 85-98 and 124 are rejected under 35 U.S.C. 102(f) as being anticipated by DiCologero (declaration filed 1-3-02, paper # 6).**

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As to claims 85-98 and 124, the declaration filed 5-11-01 (paper #3) indicates that the inventive entity of application 09/706350 is James F. Bredt (first inventor), Timothy C. Anderson (second inventor), David B. Russell (third inventor) and Sarah L. Clark (fourth inventor) whereas the declaration filed 1-3-02 (paper #6) indicates that the inventive entity of application 09/706350 is Matthew DiCologero (first inventor).

4) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5) Claims 85-98 and 124 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 85 line 4, there is no antecedent basis for "the first region". In claim 85 line 4, it is suggested to change "a region" to --a first region--.

Claims 95 and 97 are indefinite because they contain trademarks.

6) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7) **Claims 85-98 and 124 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bredt et al (WO 98/09798) in view of Earl et al (US 5943235) and at least one Keegen et al (US 3926870) and Clark et al (US 4476190).**

Bredt et al discloses a method of three dimensional printing comprising:

(1) providing a first layer of free flowing particulate material;

- (2) dispensing a fluid onto a first region of the first layer and the first region being contiguous with a second region comprising the free flowing particulate material;
- (3) allowing a solidified material to form in the first region;
- (4) providing a second layer of the particulate material over the first layer; and
- (5) dispensing a fluid onto a first region of the second layer.

Hence, Bredt et al generally discloses the claimed invention. Bredt et al teaches using particulate material comprising filler and an adhesive wherein the adhesive is activated by fluid (e.g. water) and thereafter forms the solidified material. In other words, Bredt et al uses a one component adhesive in particulate form to form the solidified material.

Although Bredt et al teaches that various particulate materials may be used as the adhesive (page 10 line 9 to page 11 line 3), Bredt et al does not recite using two component particulate material having different particulate materials as the adhesive for forming the solidified material. However, it would have been obvious to one of ordinary skill in the art to use a first particulate reactant and a second particulate reactant (as required by claim 85) as the adhesive in Bredt et al's three dimensional printing method (form each layer from two component particulate material instead of one component particulate material) since (1) Bredt et al, *directed to three dimensional printing / prototyping*, teaches that the **one component particulate material is activated by the fluid so as to become adhesive**, (2) Earl et al, *also directed to three dimensional printing / prototyping*, suggests **using reactive material (one part epoxy or two part epoxy)** in a three dimensional printing method (col. 5 line 40 to col. 6 line 60) and (3) **two component particulate material comprising two reactants (cationic material and**

anionic material), which is activated by fluid so as to become adhesive, is a well known type of adhesive material in the adhesive bonding art as evidenced for example by at least one Keegen et al and Clark et al. Hence, one of ordinary skill in the art would have readily appreciated using other water activated particulate adhesives including the known water activated two component adhesives in Bredt et al's three dimensional printing process; especially since Earl et al (in the same field of endeavor of three dimensional printing as Bredt et al) suggests that using reactive two component materials is an alternative to one component material.

As to claims 86-98: As to claim 86, it would have been obvious to provide at least one the first and second reactants to be soluble in the fluid since Bredt et al teaches that the particulate material includes water soluble material. As to the first reactant and second reactant being ionic reactants (claim 87), the reaction being ion exchange (claim 98), first reactant being an electrolyte (claim 88), first reactant being a polyelectrolyte (claim 89), the reactants being an anionic polyelectrolyte / cationic polyelectrolyte (claims 90, 92, 94 and 96), note the teaching by at least one Keegen et al and Clarke et al to use anionic and cationic particles as the adhesive material. As to claims 91, 93, 95 and 97, the claimed anionic reactant / cationic reactant would have been obvious in view of (a) the teaching by at least one Keegen et al and Clarke et al to use anionic and cationic particles as the adhesive material and optionally (b) each of the cationic reactants and anionic reactants in claims 91, 93, 95 and 97 is taken as well known / conventional per se. With respect to claim 93, it is noted that this claim

includes polyacrylic acid and that Bredt et al also teaches polyacrylic acid (page 11 line 2)

As to claim 124, the limitation of the particulate material also including inert particles would have been obvious since Bredt teaches that the particulate material comprises filler. Also note Bredt et al's teaching to include fibers in the particulate material.

Remarks

8) Applicant's election of method species C and particulate species 2 in Paper No. 12 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). As correctly noted by applicant, "Applicants note that the Examiner indicated that both Particulate Material Species 1 and 2 would be examined with species C, if either Species 1 or 2 was elected". Accordingly, Species 1 is being examined on the merits along with Species C and Species 2 since (1) both Species C and Species 2 have been elected and (2) in species C, Species 1 and Species 2 are related as subcombinations useable together instead of species.

Applicant indicates that claims 85-98 represent a grouping representative of the elected species. Claim 124 has been examined on the merits along with claims 85-98 since claim 124 (although not being generic to each of species A, B and C) is generic to elected species C and species 1, 2. See original specification page 19 lines 12-14 and page 21 lines 1-2.

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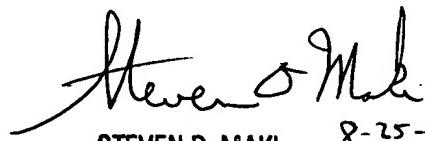
9) No claim is allowed.

10) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is 703-308-2068. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Steven D. Maki
August 25, 2003


STEVEN D. MAKI
PRIMARY EXAMINER
GROUP 1300
Av 1733

8-25-03